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THE TAR HEEL WASH OFF

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UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

DEEP RIVER AREA

HIGH POINT, NORTH CAROLINA



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Soil Conservation Service
U. S. Department of Agriculture
Washington, D. C.

THE STATE COORDINATOR'S MESSAGE

The influence of the three year demonstrational work of the Soil Conservation Service over the Deep River watershed is rapidly spreading through adjacent areas. Improved conditions, with increased soil fertility and heavier yields and with erosion definitely on the decrease, may now be observed, not only on the lands of the farmers who are cooperating with the SCS but also on farmlands lying outside the project area. This means that farmers in the entire High Point radius are beginning to think in terms of soil conservation for the future rather than in terms of immediate cash crops only. It means that, after the demonstration period has come to an end, proper land use practices will continue in operation.

Farmers who have been unable to sign cooperative agreements with the SCS because they live outside the project area, have toured the demonstrational farms and put into effect on their own lands the practices used by SCS co-operators.

A case in point is that of Mr. S. S. Clark of Sumner township. He had been practicing a good rotation for several years before the start of the Soil Conservation Service work and has carefully copied the rest of the program insofar as it met his own need. Today his farm, with its improved pastures, terraces and contour tillage stands out as an example of modern, efficient agriculture.

Mr. Hersh Smith of Kernersville township in Forsyth county, has also studied the SCS

demonstrations carefully. As a result, he is now following a good crop rotation of his own, which he devised from his observations throughout the project area, with a decrease in row crops and an increase in cover crops. He has also constructed terraces on his farm and improved his pastures.

In Randolph county there has been a similar improvement in farming practices. Many leading farmers, among them Mr. Charlie Kerns whose farm is near Asheboro, have now decreased their row crops, improved their old or constructed new terraces, devised proper crop rotations and made pasture improvements.

The circle of influence has also spread out over Davidson county, with the farm of Mr. Earl Chambliss a good indication of the trend toward better agriculture. Mr. Chambliss is practicing contour tillage, terracing, improved rotation and gully control work.

An encouraging effect of the demonstrational work lies within the demonstrational area itself. When the SCS began its work within the Deep River watershed, many farmers were skeptical and refused to sign agreements. They continued to practice their own haphazard methods of farming and the spread of erosion continued across their lands.

Today, however, they too are following the precepts of the Soil Conservation Service. Throughout the area, one may see on the farms of these non-cooperators evidences of strip-cropping, contour tillage, terracing, and all the other practices which the SCS advocates.

J. H. Stallings
State Coordinator

CROP ROTATION

Close growing crops, as lespedeza, the clovers, and perennial grasses, not only enables the land to absorb more water and retain the soil while these crops are growing on the field, but when they are turned into the soil as vegetable matter, it enables more water to be absorbed and more soil retained on the hillsides. The close growing legume crops, when turned into the soil will increase its fertility also. They should be used in the most advantageous places and arranged in a proper crop rotation system. These rotations should be planned so that the erosion resisting, soil improving crops will occupy the land as great a percentage of the time as the available acreage of the farm will permit.

If a farm had sixty acres of cultivated land and it was necessary to grow 20 acres of corn or cotton each year, then 40 acres should be kept in soil conserving crops. Where the cultivated acreage of the farm would not permit the practice of a long time rotation for the whole farm, the longer rotation should be planned for the steeper slopes remaining in cultivation, and shorter rotations for the more level land. Generally, tobacco should be grown in a separate rotation from that of other row crops. Legumes immediately preceding tobacco on a field, will cause poor quality being produced.

Wherever practical, the crops should be rotated in broad strips crosswise the slope on rolling land. This plan is more effective in conserving soils on such land than when rotated by fields.

The following rotations are suited for conserving the soil, and are adapted to the climatic and farming conditions of the Piedmont region of North Carolina: For corn and small grain crops - the first year, corn followed by small grain in fall; the second year, lespedeza or clover seeded in the small grain, and the third year, remaining in lespedeza or clover. This is a three year rotation.

One for corn or cotton farming is, first year, cotton with vetch seeded in the cotton during the early fall; second year, corn interplanted with soybeans, followed by small grain in fall; third year, lespedeza or clover seeded in small grain, and fourth year, remaining in lespedeza or clover. This is a four year rotation.

For cotton farming this is a good one: First year, corn followed by vetch in early fall; second year, cotton followed by small grain or oats in the spring of the third year; third year, lespedeza or clover seeded in small grain; fourth year remaining in lespedeza or clover. This is a four year rotation.

A good tobacco rotation is, first year, tobacco followed by rye in fall for winter cover crop; second year, tobacco followed by small grain and red top grass in fall; third year, small grain and red top; fourth year remaining in red top. This is a four year rotation. There are many other rotations that may be used. The one should be used that will meet the conditions of the individual farm and conserve the soil.

Any farmer will find that the practice of rotating crops in a definite system will pay, both from the standpoint of conserving the soil and increasing the yields of the crop.

SUB-SOILING

This year has seen sub-soiling well under way in Guilford County, with approximately 200 acres sub-soiled to date.

Sub-soiling is still in its infancy in the Deep River area, but observations on the demonstrations already made seem to indicate that sub-soiling in the Piedmont will aid materially in the conservation of both soil and water.

Many of the farmers who have signed co-operative agreements with the Soil Conservation Service, are adding sub-soiling to their conservation practices.

This practice loosens up the stiff, tight clay sub-soil, admitting and conserving moisture. When properly sub-soiled, very little water runs off under normal conditions, especially on soils with heavy clay sub-soils.

The Guilford County terracing unit is operating a sub-soiling unit at night on the farms of a number of farmers cooperating with the Deep River and Roedy Fork demonstration projects, and the High Point ECW Camp. The charge for this work is \$2.75 an hour, which amounts to approximately \$3.00 per acre. The ground is sub-soiled on the contour to a depth ranging from 18 to 26 inches. To obtain the best results, it is essential that the ground be dry enough for cultivation at the time the sub-soiling is done. If the ground is too wet, the clay sub-soils are sticky and do not pulverize readily. August and September are the best months for sub-soiling in this section.

A demonstration of the results of sub-soiling may be seen on the farm of Flake Shaw,

near Summerfield, who was one of the first of the local farmers to adopt the practice early last May.

A field was subsoiled between terraces, leaving one strip for comparison. One day's rain last June was practically all the rain that fell on the Shaw farm during the growing season. Yet this rain gave the sub-soiled strips sufficient moisture for the entire season. The difference between the strips that were sub-soiled and the one that was not, is as obvious as the difference between two strips, one with an application of fertilizer and one with no fertilizer.

The soybean plants grown on the sub-soiled strips averaged 14 ounces in weight, while those grown on the unsubsoiled strip averaged only 4 ounces.

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The economic waste in attempting to produce row crops on land which erosion and soil characteristics, or the topography make unfit for clean tilled crops, has been materially lessened in the Demonstrational Project and SCS-ECW camp areas. The Soil Conservation Service's recommendations are that these lands be retired from cultivation and planted to permanent pastures, permanent hays, woodland and other uses that will control erosion and provide larger future income.

The land owners who are cooperating with the Soil Conservation Service in an erosion control program, have agreed to retire from cultivation approximately 15,000 acres. Of this acreage 8,055 acres have actually been retired to date. The total acreage to be retired is distributed as follows:

Permanent pastures 3,500 acres; permanent hay 5,600 acres; woodland 3,800 acres and other uses 2,100 acres.

EDITORIALS

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FEDERAL BUILDING - High Point, N. C.
STATE COORDINATOR - Dr. J. H. Stallings

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EROSION CONTROL

Soil erosion takes place in almost every agricultural region.

Soil erosion cannot be stopped entirely, but it can be so controlled that damage will be very slight.

Cultivation of land tends to increase many fold the rate of erosion. Certain common farming practices are among the leading causes of soil erosion. Prevention of erosion, therefore, may be greatly aided by avoiding those practices which include the removing of forest or sod cover from steep slopes; shallow tillage; cultivating up or down the slope; unwise location of dead furrows, cattle runs and field roads; and crop rotations that fail to maintain plenty of organic matter in the soil.

Many simple practices in farm operation that the farmer may apply without outside help will be of great aid in controlling erosion on the farm. Likewise

there are many other common practices that he should avoid because they further erosion.

Soil erosion control is an important problem in North Carolina - too important to be ignored by any farmer who operates sloping land. The primary causes of soil erosion are the direct action of rain beating upon the bare soil and the rapid run-off of the water. Soil erosion is most severe in the heavier and more uniform soils and on steep slopes.

Although gullying is not the most serious type of erosion, it is the more widely recognized type because its damage to fields is so easily seen.

Sheet erosion or surface washing does not of itself create ditches. However the same conditions that cause sheet erosion are generally favorable for the formation of gullies, since the free run-off of water that causes sheet erosion also means the collection of large amounts of water in furrows and other depressions that are often starting points of gullies. Therefore, stopping or controlling sheet erosion will in many cases remove the likelihood of gullying.

The vital issue then, is the prevention of erosion and the saving of valuable topsoil. To this end, the Soil Conservation Service of the U. S. Department of Agriculture, is working with cooperating farmers throughout the country.

Soil erosion has been attacked on all fronts, and various effective methods of soil conservation and control, such as terracing, contour tillage, crop rotation, strip cropping, forestry, etc., have been established over large areas, with most gratifying results.

WINTER COVER CROPS

The Soil Conservation Service of the Deep River area is encouraging the use of more legume winter cover crops. In some cases, the service is cooperating with the farmers in supplying a small amount of Austrian winter peas, vetch, and crimson clover for demonstrational purposes.

The first objective in the demonstrations is to control soil and water losses by the cover afforded by these plants. Second, this group of plants belongs to the legume family, which is able by the aid of the soil bacteria to add nitrogen to the soil. The third objective is to utilize the surplus plant food not taken up by the last growing crop, and which would otherwise be leached out of the soil by the heavy winter rains and lost. These cover crops will add much organic matter to the soil, which will enable the farmers to get a better crop yield, and give the soil better water holding capacity.

Most of these demonstrations are being worked out in conjunction with strip-cropping. Lespedeza fields that would ordinarily be planted to corn or other row crops the following spring, are being divided into strips on the contour with regular terrace interval spacing.

Approximately 50 percent of the strips are sown using the winter legume mixtures, or using each crop separately. The remaining strips are left for a hay crop or sown to small grain. The strips having winter cover crops will be planted to a row crop next spring.

It is believed by some of our experimental workers that a large part of the nitrogen stored by the lespedeza plants during the summer is being leached by the heavy winter rains, and that the use of the winter legumes will greatly reduce this plant food loss. These winter legumes will make an excellent early spring hay, when sown in a small grain mixture, such as oats, barley or wheat. It is highly important that Austrian winter peas, vetch and crimson clover seeds be sown in September, if possible, and not later than October 15.

These demonstrations are being made, not only to help the individual farmer, but also that the neighboring farmers may profit from the demonstrations, and work into their own farm programs a legume winter cover crop system.

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CARE OF TERRACE OUTLETS

Farmers who have had terraces built should keep a constant check on the outlets and outlet ditches. Outlet ditches that are protected by vegetation should be given the necessary treatment to maintain a good sod. They should be mowed often enough to keep down weeds and surplus top growth. Fertilizer or manure should be applied often enough to keep sod in a vigorous growing condition.

If the sod becomes broken or thin in spots, repairs should be made at once. These places should be sodded with good sod, well tamped in. These repaired spots should be fertilized or manured liberally to stimulate rapid growth. Badly washed places in all outlet ditches should be filled with soil, fertilized, seeded and paved lightly with small brush.

FORESTRY

Forestry, in erosion control, may be broadly divided into two main objectives: First, the reforestation of such abandoned, waste or idle lands not otherwise suitable for agricultural purposes, or for watershed protection, and second, to give assistance to land owners in a proper management and handling of their woodlands.

Farm woodlands in North Carolina comprise about one-half of the total forest land area of the State. Woodlands occupy more acres of North Carolina farms than all other combined land uses. The area of farm woodlands in North Carolina increased 21 percent during the five year period 1929-1934. In 1934, the forest products cut and sold from farms within the state, ranked fifth as a cash income crop.

Attention given to providing good conditions for the growth of the trees which it contains, will pay the farmer well, both in comfort and in cash. If properly cared for the woods will furnish at all times a convenient supply of timber, fuel, fencing and the like, for home use and at intervals will yield valuable material for market.

A well cared for home forest serves as a wind break for buildings, a shelter for livestock, a protection of valuable lands from erosion, a means of profitable employment for men and teams during otherwise spare or idle time, a place of recreation and an improvement in the appearance of the farm.

WILDLIFE

★ The Wildlife Department of the Soil Conservation Service reminds hunters that the game supply in the Deep River area is rapidly diminishing. A plea is made to all outdoor sportsman to bear this fact in mind, as another hunting season opens. The land owner, however, is directly responsible for the conservation and welfare of the wildlife on his farm.

What have you done during the past year to aid and protect the desirable wildlife about you?

Have you left a few hickory trees standing in your woods to furnish food for the squirrels? And in mowing, did you remember to leave a strip of lespedeza or grain bordering your field, or surrounding that patch of briars in that draw, or, in that abandoned corner that could not be reached with your sickle?

Have your gullies been seeded to lespedeza to provide food and cover for quail and other ground birds? Or are they still red and barren and of no use to any bird or animal? Plants and shrubs, such as lespedeza and coralberry planted in gullies serve the double purpose of furnishing food and cover for wildlife and of controlling soil erosion.

It is your further duty, Mr. Farmer, to see that your wildlife is protected from wanton slaughter by unsportsmanlike hunters in order that a sufficient breeding stock be reserved for restocking the land each year. As concerns quail, at least eight birds should be left in each covey to replenish the stock for another season.

FALL AND WINTER MAINTENANCE OF TERRACES

The proper maintenance of terraces during the fall and winter months is important, especially where the terraces are comparatively new. On erosive types, as our Helena, Appling, and mixed types of sandy soils, terraces require more attention, than do those on heavy clay soils.

In the first place, all tillage, such as breaking the land, discing or drilling, should be done parallel with the terraces, and NOT across them. The flow lines should be kept open. If allowed to gather silt, water may break over, causing more damage than if the fields had not been terraced.

One of the most effective methods of holding the terraces in tact during the winter months, and adding organic matter to the soil, is to seed the terraced fields to winter cover crops, such as crimson clover, Austrian winter peas, vetch and small grain, or, a mixture of a part or all of these.

Where diversion ditches or terraces empty into woods, it becomes necessary to throw a few loose rocks into the flow line, to catch the soil and prevent gullyng or cutting. Sod may also be used for this purpose.

Following the terracing of eroded or run down land, it is advisable to improve the soil for at least two years by the use of cover and green manure crops to be plowed under, rather than grow clean-tilled crops immediately.

The choice of summer crops for this purpose is lespedeza and the clovers. Annual summer legumes, as soybeans and cow peas may also be used to good advantage.

GULLY CONTROL

In order to stop shallow gullies in a field, fill with earth and terrace over. Large gullies are stabilized by temporary checkdams of brush, logs, wire or rock, and permanent plantings of trees, shrubs and vines.

The following plants are best adapted to gully control: Berry vines, blackhaw, wild cherry, honeysuckle, Indian current, black and honey locust. Mulberry, amoor-river privet, pines, wild plum, Carolina poplar, willow, lespedeza, coralberry, grains, grasses, and other thick-growing plants.

Shoulders and spillways of checkdams should be seeded to thick-growing plants. Below the dam honeysuckle plants should be staggered 2 to 3 feet apart, and willows used in the moist places. Berry vines are set about 2 feet apart in the gully, where there is enough soil to make good growth. Also, black locust, pines and miscellaneous plants are planted irregularly between the dams about 3 to 4 feet apart.

The rims of gullies are planted to sprawling plants, such as dewberry and honeysuckle. Also there are places around the edge where wild plums, locusts and pines may be set.

If the slope is not too steep, both vines and trees are planted. If too steep for trees, the slopes are planted to vines. As a rule, plants from one to two years old should be used.

Plants used for gully control provide food and cover for wildlife, and the Soil Conservation Service includes that feature as a part of its general program, as well as providing plants that may be grown for posts and other farm uses.

UNITED STATES
DEPARTMENT OF AGRICULTURE
Soil Conservation Service
High Point, N. C.

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